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Imagery Rescripting For Obsessive Compulsive Disorder: a single case
experimental design in 12 cases

RUNNING HEAD: Imagery Rescripting in OCD

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Abstract

Background and Objectives: People with Obsessive Compulsive Disorder (OCD) may experience recurrent intrusive distressing images, which may be emotionally linked to a past aversive memory. Our aim was to investigate whether Imagery Rescripting was an effective intervention for such individuals with OCD.

Method: Twelve cases who experienced intrusive distressing images are presented in a $A_1BA_2CA_3$ single case experimental design. After a baseline (A_1), participants had a control intervention of talking about the memory (B), followed by symptom monitoring (A_2), Imagery Rescripting (C) and further monitoring for up to 12 months (A_3).

Results: Minimal change was seen following the control intervention. However, after 3 month follow up of a single session of ImRs, there was a drop in the Yale-Brown Obsessive Compulsive Scale showing a substantial decrease from a mean of 24.1 to 10.7. Reliable improvement was achieved in 9 out of the 12 cases and Clinically significant change in 7 out of 12.

Conclusions: Imagery Rescripting is a promising treatment intervention for OCD with intrusive images and aversive memories. Further investigation is required into whether the intervention can be used in those with no intrusive images but having an aversive memory linked to the onset of their OCD.

Keywords: Obsessive Compulsive Disorder, Imagery, Imagery Rescripting, Traumatic Memories, Anxiety

1. INTRODUCTION

Cognitive Behavioral Therapy (CBT), including exposure and response prevention, remains the psychological treatment of choice for obsessive-compulsive disorder (OCD) (National Institute for Health and Care Excellence, 2005). However, a significant proportion of cases still fail to respond to CBT (Abramowitz, Franklin, Schwartz, & Furr, 2003; Rufer, Fricke, Moritz, Kloss & Hand, 2006; Tolin, Maltby, Diefenbach, Hannan, & Worhunsky, 2004). This has prompted the search for new target areas for intervention, in the hope that outcomes can be improved.

Imagery has long been discussed within cognitive models of anxiety disorders including OCD (de Silva, 1986; Hackmann, Surawy, & Clark, 1998). However it is particularly prominent in post-traumatic stress disorder (PTSD) (Ehlers & Clark, 2000; Bisson et al. 2007). Here intrusive images related to the trauma are considered to play an important role in the maintenance of the disorder (Hirsch & Holmes, 2007). Intrusive imagery with an aversive memory is experienced in a variety of other anxiety disorders, including social phobia (Hackmann, Clark & McManus, 2000), body dysmorphic disorder (Osman, Cooper, Hackmann & Veale, 2004), agoraphobia (Day, Holmes & Hackmann 2004), specific phobia of vomiting (Price, Veale & Brewin, 2012), health anxiety (Muse, McManus, Hackmann, Williams & Williams, 2010) and OCD (Coughtrey, Shafran, Rachman, 2013; Lipton, Brewin, Linke, & Halperin, 2010; Speckens, Hackman, Ehlers & Cuthbert, 2007). Thus, Speckens et al. (2007) found that 81% (29/37) of participants with severe OCD reported intrusive mental imagery. In 76% of these participants, the images resulted in their subsequent engagement in compulsive behaviors. OCD symptoms reportedly developed following an aversive event, which has been noted before in some types of OCD (Coles, Pietrefesa, Schofield & Cook, 2008; de Silva & Marks, 1999; Lipinski &

Pope, 1994). They also found that for these participants, the intrusive images held an important association, often linked to beliefs they held about themselves or their responsibilities. Images were usually associated with memories of adverse events (e.g. bullying), which may not have been emotionally processed.

Imagery Rescripting (ImRs) deliberately targets aversive or traumatic memories and has been investigated across a range of disorders in which intrusive images are present. Wild, Hackmann and Clark (2007) found that when ImRs was used to update the meanings of aversive memories in participants with social phobia, a resulting change was seen in their maladaptive beliefs, and in the associated intrusive images thought to play a role in maintaining the disorder. A reduction in the overall severity of the participant's social phobia was also found. Nilsson, Lundh and Viborg (2012) also found similar changes for ImRs in social phobia without the need for cognitive restructuring. ImRs has also shown promising results as an intervention for depression (Brewin et al., 2009), and as an adjunct to treatment of personality disorders (Weeterman & Arntz, 2007). Arntz, (2012) provides a comprehensive summary of the use of ImRs across disorders as well as suggesting a research agenda for developing the work within the field both in terms of clinical application and in investigating the underlying mechanisms of change. He highlights the need to investigate ImRs as a stand-alone intervention even if it is not intended to be used in isolation from other treatments and, furthermore, the need to allow for adequate follow-up data without further intervention to establish the possible long-term effects of ImRs in isolation. This study aims to follow that model.

It was hypothesized that by addressing the aversive memory using ImRs, a reduction in maintaining factors (specifically the catastrophic misinterpretation of intrusions, and changing the context of the emotional memory), would be associated

with a reduction in OCD symptoms on the Yale-Brown Obsessive Compulsive Scale (Goodman et al, 1989). The current paper also builds on previous case series in other disorders by incorporating a control intervention and randomization to the start of the control intervention.

2. METHOD

The study employed an $A_1BA_2CA_3$ single case experimental design. In this design, A_1 refers to the initial baseline, B refers to the control intervention, A_2 to a period of symptom monitoring after the control intervention, C to the intervention being investigated (a session of Imagery Rescripting of the aversive memory), and A_3 to a further period of symptom monitoring.

2.1 Participants

The study involved 13 consecutive participants who experienced intrusive imagery and were recruited after seeking treatment for Obsessive Compulsive Disorder. One participant was not recruited as between the initial assessment and recruitment into the study, she made the emotional link between the aversive memory and OCD and no longer fitted the inclusion criteria as her YBOCs was too low.

2.2 Inclusion Criteria

- (1) Main diagnosis of OCD by the Structured Clinical Interview for DSM-IV Disorders (SCID) (First, Spitzer, Gibbon & Williams, 1995).
- (2) Experienced intrusive imagery as part of their OCD, which was considered emotionally linked to memories of past aversive events.
- (3) Either not on psychopharmacological treatment or on a stable dose of any pharmacological treatment for 8 weeks prior to the study and no plans to alter the dose throughout the measurement period.

2.3 Exclusion Criteria

(1) Major co-morbid disorder of psychosis or borderline personality disorder or alcohol or substance misuse or dependence.

(2) Concurrent additional psychotherapy.

2.5 Measures

Standardized rating scales were also used on a weekly basis to measure mood and specific symptoms related to the disorder. These were:

(a) Yale-Brown Obsessive Compulsive scale (Y-BOCS) (Goodman et al., 1989). The Y-BOCS is a 10-item clinician-rated scale used to measure the severity of obsessive-compulsive symptoms and response to treatment. Each item is scored from 0 (no symptoms) to 4 (extreme symptoms), giving the total score with a range from 0 to 40. Higher scores indicate greater symptomatology of OCD. The Cronbach's alpha is 0.91.

(b) Obsessive Compulsive Inventory (OCI) (Foa, Kozak, Salkovskis, Coles & Amir, 1998). The OCI is a 42-item self-report scale for OCD symptoms. The current study used the distress-only version of the OCI, for which items are rated on a 5-point Likert scale ranging from 0 (not at all) to 4 (extremely). The scale measures distress relating to 7 different subscale constructs; washing, checking, doubting, ordering, obsessions, hoarding, and neutralizing. All items or subscale scores are summed to give a total score ranging between 0 and 168. The measure has good internal reliability, with Cronbach's alpha being 0.92 in the OCD sample.

(c) Responsibility Interpretations Questionnaire (RIQ) (Salkovskis et al., 2000). The RIQ is a 22-item questionnaire used to assess the interpretation of intrusive thoughts about potential harm by rating their frequency of occurrence (0 = never, 4 = always) and the degree of belief in them (0 = not at all, 100 = completely convinced). Up to 5 intrusions experienced by a patient in the last 2 weeks are given.

Frequency measures both the total number of negative and positive interpretations. Cronbach's alpha for the frequency of high responsibility interpretations, frequency of low responsibility interpretations, belief of high responsibility interpretations, and belief of low responsibility interpretations was .93, .86, .92, and .91 respectively.

(d) Beck Depression Inventory (BDI) (Beck, Ward, Medelsohn, Mock & Erbaugh, 1961). The BDI is a 21-item self-report measure of depressive symptoms rated from 0 (least intensity) to 3 (highest intensity). It is widely used as a treatment outcome measure and has a mean Cronbach's alpha of .86 measured across 25 studies. The BDI has a maximum score of 63, with 30 or more indicating severe depression.

(e) Beck Anxiety Inventory (BAI) (Beck & Steer, 1993)

The BAI is a 21-item self-report measure of severity of anxiety symptoms. Item scores range from 0 (not at all) to 3 (severely). The BAI has a maximum score of 63, with 26 or more indicating severe anxiety. It has good internal reliability with a Cronbach's alpha of .92.

2.5 Procedure

Participants were identified as having intrusive images and aversive memories through use of a modified version of the semi-structured interview used by Speckens et al., (2007). They were then contacted and invited to participate in the study. Participants were randomized to a start point of 4, 8, 12, or 16 days, when they received a control intervention (B). The control intervention involved a discussion about the content of the aversive memory in the past tense and the associated beliefs without attempting to change the meaning or context of the memory. The first three cases received ImRs (C) after one week of symptom monitoring (A_2) and the last 9 cases were randomized again to a period of 4, 8, 12 or 16 days of symptom

monitoring, at which point participants received the ImRs (C).

The experimental intervention (phase C) was an ImRs treatment session aimed at targeting a participant's aversive memories. The ImRs was carried out by an accredited cognitive behavioral therapist who was experienced in treating OCD at a national specialist service for anxiety disorders. It consisted of Arntz's three-stage technique for adapting the context of early traumatic childhood memories (Arntz & Weeterman, 1999). In Arntz's technique, stages include reliving the event as a child, re-entering as an adult and then reviewing the event as a child once more. The aim of the reliving and restructuring was to change the meaning of the memory to something less catastrophic, in terms of both the actual content and the context of the memory. No other intervention or subsequent instructions for homework was provided after the ImRs (A3).

Statistical Analysis

The YBOCS scale was used to identify the number of participants who displayed reliable and clinically significant change from baseline to 3 month follow up following ImRs. The method summarises changes at the level of the individual in the context of observed changes for a larger sample to determine whether there has been (a) reliable change, and/or (b) clinically significant change (Jacobsen & Truax, 1991). We used Criterion "a" for the YBOCS which is pre-change to post-change of at least 2 standard deviations from the original mean. We did not use Criterion "b" or "c" for the YBOCS as appropriate normative data on the Y-BOCS does not exist on a representative non-clinical population. Although two studies (Frost Steketee, Krause & Trepanier, 1995; Steketee, Frost, & Bogart, 1996) provide normative data on the Y-BOCS, Fisher and Wells (2005) argue that the samples are small and comprised of female undergraduates. Small samples do not provide reliable estimates of general

population parameters (Kendall, 1999). Using an all female undergraduate sample as the normative reference group would violate a central premise of the Jacobson approach, namely that the non-clinical population should be similar to the clinical population, except with regard to the presenting problem. Furthermore, comprehensive screening for OCD and other psychiatric disorders did not take place and the presence of OCD or other psychiatric disorders could spuriously inflate scores on the Y-BOCS. We used an Excel spread sheet, the Leeds Reliable Change Indicator (Morley & Dowser, 2014). The clinical population means and standard deviation for the YBOCS was taken from the meta-analysis of 5 clinical trials of 300 patients and calculated to be a drop of 10 points (Fisher & Wells, 2005).

RESULTS

Table 1 provides a brief a clinical summary of each participant.

-----Table 1 About Here-----

‘OCD Threat Interpretation’ refers to the meaning of the intrusion. For example, participant 4 experienced intrusive thoughts and images about causing accidents whilst driving, thoughts about burning her house and concerns about contracting HIV; her interpretation of all these intrusions was that these events would come to pass and she “will cause harm and be shamed”. ‘Age of Onset’ refers to the age at first diagnosis though OCD symptoms may have been present earlier than this. ‘Memory Rescripted’ is a brief description of the content of the memory targeted by the ImRs session. ‘Meaning of Memory’ refers to the meaning of the memory prior to the ImRs session. ‘Age in ImRs’ refers to the participant’s age at the time of the events in the memory. ‘New Meaning after ImRs’ refers to a brief summary of the updated and less negative meaning of the memory targeted in the ImRs session.

Outcomes

Clinical Measures

All 12 participants were administered both the control and ImRs interventions and remained in the study up to 3 month follow up. Therapeutic gains can be seen for each of the participants following ImRs all of whom showed a decrease in OCD symptoms, depression, anxiety at 1 and 3-month post-ImRs follow up. Table 2 refers to mean scores (and standard deviation) across all 12 participants on the YBOCS and the OCI, RIQ, BAI and BDI self-report measures at baseline, post-control intervention, post-ImRs and 3 month follow up post ImRs.

-----Table 2 About Here-----

The OCD measures (YBOCS, OCI and RIQ) all show little or no change from baseline to post-control intervention, a reduction to post-ImRs and a further reduction to 3 month follow up. The BDI and BAI each show a gradual reduction from baseline to each measurement point.

Reliable and Clinically Significant Change on the YBOCS

After the control intervention 1 out 12 participants made reliable improvement on the YBOCS and none had made clinically significant change ($RCI = 6.30$). After ImRs, 8 out of 12 participants had made reliable improvement on the YBOCS, and 5 out 12 met clinically significant change ($RCI=6.65$). At 3 month follow up, 9 out of 12 had achieved a reliable improvement on the YBOCS and 7 out 12 had achieved clinically significant change ($RCI=6.65$) (Figure 1).

DISCUSSION

Our case series has demonstrated that after 1 session of ImRs, there were clinically significant change in 7 out of 12 participants on YBOCS at 3 months follow up after one treatment session. During follow up, participants received no further CBT nor instructions in exposure and response prevention or behavioural

experiments. All participants reported they had received at least one trial of CBT in the past and although we cannot be sure whether these were adequately delivered, the intervention may have assisted the participants to now make necessary changes. We also cannot be sure that the effect of time and maturation would have not occurred after the control intervention. However this seems unlikely as none of the 12 participants achieved clinically significant improvement on the YBOCS after the control compared to 5 who made improvement immediately after ImRs. Furthermore they had been symptomatic since adolescence. We would therefore cautiously recommend the use of ImRs as a brief intervention at the beginning of therapy in those clients who experience intrusive images that are emotionally linked with an aversive memory. One participant who was referred to the study was not included: she had late onset OCD and made the emotional link with her aversive memory of complicated labour. Therefore, for some people it may be sufficient to make the emotional link verbally or conduct stimulus discrimination between the context of the earlier memory and current experience.

The most important limitation of these findings is that all the cases reported were selected to those who had an aversive memory linked to their imagery. However this raises many future avenues of research. For example can ImRs be generalized to cases where there is an aversive memory or memories relevant to a developmental formulation, but no intrusive imagery? Here imagery may still be used to access an emotionally conditioned memory. This is still likely to depend on the client being able to re-experience the emotion as in the treatment for PTSD.

We can only speculate on the mechanism for change in these cases. Rachman, (1980, 2001) first described the failure to emotionally process events as an explanatory concept with relevance to anxiety disorders. He defined emotional

processing as a process whereby emotional disturbances are absorbed, and declined to the extent that other experiences and behavior can proceed without disruption.

Rachman argued that if emotional experiences were incompletely processed then certain signs of this failure would be manifested, such as the return of fear and obsessions. Furthermore, he suggested that excessive inhibition or prolonged experiential avoidance of such events would lead to the maintenance of fear. This suggests that, for some, OCD symptoms may be maintained by an emotional memory which is a promising target for intervention. All participants had had aversive memories of being physically bullied or humiliated, or of sexual abuse or the threat of being abandoned, or of responsibility for causing suffering. None of the cases fulfilled the criterion for Post-Traumatic Stress Disorder. It would be of interest to conduct a qualitative study on the themes that are associated with these emotionally conditioned memories across different diagnoses and whether there are crosscutting themes and emotions.

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